The Management of Peptic Ulcer

An Internist's Approach

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• *Gastric and duodenal ulcers are common conditions. There is a good natural tendency to heal but medical care does facilitate healing and the prevention of relapse. Bed rest, light diet and attention to the anxiety factor still pay dividends. Unfortunately there have not been any major medical advances in recent years.*

With gastric ulcer, careful clinical and radiological observations will enable simple and malignant ulcers to be distinguished with considerable accuracy.

The risk of gastrectomy is less than the risk of leaving a persistently unhealed ulcer, and should be undertaken if ulcers remain unhealed or if there are frequent relapses threatening economic security.

IT IS IMPORTANT to have some perspective of the problem of peptic ulcer as it occurs in the community and particularly to remember that the scars of gastric and duodenal ulcers are one of the commonest of incidental observations at autopsy. There is undoubtedly a very good natural tendency to recovery and there is no doubt that medical treatment not infrequently gets the credit for nature's cure. Taking the total number of persons with diagnosed ulcers in the community—those who have had definite ulcer-like symptoms or complication of ulcer—it will be noted that in about one-third of the cases, the ulcer has been an episode followed by some years of freedom from dyspepsia, or with perhaps slight symptoms; and that in rather more than one-third of the patients there are recurrent symptoms at varying intervals but that with some degree of care and discretion the bouts of dyspepsia can be minimized and lead to little or no loss of time from work. In the remaining cases, the patient has had a great deal of pain or troublesome complications and if operation has not already been performed, it is really needed. This is the picture that one gets when a total population is surveyed, as I had the opportunity of doing with Dr. Doll a few years ago, when we interviewed about 6,000 people in a variety of occupations. Those who work only in hospitals might perhaps feel that the overall picture of ulcer is much more troublesome, but of course the patients are already a selected group by the time they reach hospital.

In terms of pathology, the natural history of ulceration in the more troublesome cases is a whole series of ulcers which come and are healed completely, but a time may come when the ulcer no longer heals and with increasing induration and endarteritis of the smaller blood vessels, the blood supply becomes so deficient that it can no longer sustain healing tissue and in fact healing is no longer possible. At this stage, the ulceration process can always flare up, causing further penetration and erosion of main blood vessels, but sometimes these persistent chronic ulcers may be remarkably pain-free for many months on end. Obviously at this stage surgical treatment is required.

The size of the ulcer does not correlate well with the amount of trouble caused to the patient. Some of the most persistent and painful ulcers are relatively small. On the other hand, a very large ulcer with a short history may heal completely and remain healed.

An accurate diagnosis is of course the first essential. It is perhaps not sufficiently realized how atypical the pain may be. It is easy enough with remittent attacks of epigastric or retrosternal pain related to meals, but quite often the pain bears no relationship to food and its site may be unusual—in the lower chest, the loin, the back or the iliac fossa. Sometimes pain may be felt in the back only. Again, pain may be virtually absent, but with perhaps only a sense of discomfort or nausea; and there seems no doubt that the ability of some patients to feel deep-seated pain varies greatly and it may be possible to correlate this with an obvious depression of deep-pressure pain when tested by pressure on the styloid process or the Achilles tendon. These cases are only diagnosed when the internist is prepared to order a barium meal with these atypical clinical pictures.

We have no specific treatment for peptic ulcer, and I do not believe there have been any specific

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cures in spite of many claims made in recent years. The management of peptic ulcer is still an exercise in old-fashioned medicine just as was pneumonia before the introduction of antibiotics. Nevertheless, a great deal can be done to influence the disease process. The essence of treatment is achieving physical and mental rest, and the relief of pain. From the patient's point of view the relief of pain is the first essential. Bed rest and small feeds may be sufficient with alkalies, milk drip and anticholinergic drugs in reserve. The best single therapeutic measure for troublesome pain is a milk drip, and a very small intranasal tube is well tolerated by the majority of patients. If relief of pain is slow and difficult to achieve it is of bad prognostic significance and operation is generally required. Having achieved relief of pain one can then concentrate on the general measures, particularly those which influence the disease process. I am sure bed rest is one of the most important therapeutic measures. My colleague, Dr. Doll, has measured the rate of healing of gastric ulcer, and has observed the influence of antacids, belladonna, phenobarbitone, Robaden and milk drip, but so far a significant improvement can be correlated only with bed rest. However, in individual circumstances it may be better to let the patient carry on at work rather than impose the added financial hardship of loss of employment. Patients who put on weight usually do well and patients who lose weight do badly. The basic diet should be built up as quickly as possible to provide an adequate calorie, protein and vitamin intake, and the milk drip kept going for a time to further improve the nutritional state.

The next essential is to tackle the anxiety factor which may seriously aggravate the disease process and retard healing. It is important to establish good rapport with the patient, and this needs time, privacy and patience, and on the whole is more easily done with a patient having bed rest than attending one's consulting rooms. Once the patient feels he has a sympathetic independent person who is anxious to help and is there in the capacity of friend and not as judge, he may be prepared to unburden his difficulties which too often have caused pent-up emotional stress because there has been no one in whom he can confide. The relief of such emotional tension is in itself of great therapeutic value.

So often the patient gets his difficulties out of perspective and they have become much more important than they really are. This is where the independent observer can so well help. This approach is equally important with other chronic illnesses such as pulmonary tuberculosis and skin disease. I prefer to call this not psychosomatic therapy but ordinary old-fashioned medical care. It was certainly instilled into me by Professor Frazer at St. Bartholomew's Hospital long before psychosomatic medicine was talked of.

As far as diet is concerned, I believe a simple commonsense diet avoiding the common indigestible foods, with regular feeds is all that is necessary. I do not advocate elaborate dietary regimens. One should always avoid overtreatment, which can be positively harmful with a patient of obsessional type.

With regard to medication, I hold no brief for excessive and persistent use of alkalies, apart from the initial phase when there is pain. Alkaline therapy is, however, usually necessary with ambulatory treatment. There is no doubt that excessive milk and excessive alkalies can lead to metabolic difficulties and chronic tubular nephrosis. I believe the most important single medication in the management of peptic ulcer is phenobarbitone. I do not hold any strong brief for the use of anticholinergic drugs except when there is pain. During the past few years there has been a tremendous spate of these anticholinergic drugs. Belladonna has had a time honored role, and these new preparations have sought to emulate its action, but with fewer undesirable side-effects. Banthine® blazed the trail and has been followed by a bewildering number of other drugs, including Antrenyl,® Bentyl,® Centrine,® Lergine,® Lytensium,® Monodral,® Pamine,® Prantal® and Wyovin®; and much has been written on both sides of the Atlantic about their pharmacological and clinical effects.

All these drugs have much in common. The chemical composition is complex; they achieve an anticholinergic effect like atropine, either by blocking transmission at autonomic ganglia or at the peripheral effector site; they reduce basal secretion and slow the emptying time of the stomach and reduce intestinal muscular activity. Although it is mainly claimed that side-effects are minimal, in practice the usual atropine-like disturbances of impaired vision and dryness of the mouth, are quite common and sometimes there may be difficulty in urination and constipation. Moreover, there is considerable variability in response between different patients and even in the same patient at different times.

In general the therapeutic contribution of these new drugs is not impressive and they do not represent any real major advance in the therapy of peptic ulcer. Nor were they likely to do so, as atropine and related drugs, although of real value in smooth muscle spasm, have never been conclusively proved to be of great worth in the management of peptic ulcer. Most clinicians would agree, however, that belladonna can be useful in stopping pain, particularly night pain, in duodenal ulcer. According to Nicol[2] (1939), even really large doses of atropine apparently had very little effect on the

acid of the stomach when measured over 24 hours and no better success seems to have been achieved by ganglion-blocking agents in this respect (Rowlands,[3] 1952). It has been postulated that slowing the rate of emptying of the stomach would allow the more effective use of antacids, but this hypothesis is by no means proved. The distention of the stomach is itself an important stimulus to secretion, and slowing of the rate of emptying may well mean more prolonged secretion, which would offset the neutralization. Again the inhibition of other intestinal secretions, particularly pancreatic, might offset any benefit to the duodenum from lowering of the gastric acidity. Indeed, as a means of facilitating healing of peptic ulcer, the use of these drugs is still based on doubtful hypotheses and insufficient clinical study with control series.

The clinical evidence of the value of methantheline (Banthine) in controlled observations was quite unimpressive apart from some reduction of pain, and Friedlander[1] (1954) did not find that the natural history of duodenal ulcer was beneficially affected. Texter and Barborka[4] (1954) followed 250 patients with proved peptic ulcer for two years. They concluded that although symptomatic improvement for a period frequently accompanied the use of these agents, the eventual course of the disease was not altered.

Although the natural history of the disease is not materially influenced, improved relief of pain is an important consideration from the patient's point of view and justifies the use of any of these preparations during the phase of active ulceration, but it would seem reasonable to see whether the desired effect cannot be obtained with the traditional belladonna, before prescribing these new, and much more expensive, preparations.

In general, patients like to have brand new treatments and it is an advantage to have a variety of compounds available in the management of a chronic and relapsing disease. Apart from some difference in side-effects, it is unlikely that any one of the many new preparations will prove to have any real superiority over its rivals, and the practitioner need not feel that he must personally evaluate each preparation.

What can be done about the prevention of relapses? One should aim at the prevention of nervous tension, of fatigue, of irregularity of meals, of long intervals without food, and at the maintenance of a good nutritional state. Prevention of fatigue usually means giving up some commitments, and the physician must take full advantage of the period of illness to encourage the patient to lighten his load, which he can do on medical grounds without loss of face—a most important consideration, as otherwise he feels that his colleagues think that he is letting the side down, and this engenders more tension. I believe the patient can do a great deal to reduce his state of chronic nervous tension once the problem is posed to him. It is possible for a patient to get out of his skin and look at himself, and really ask what he is gaining by his constant state of nervous anticipation. To a certain extent it may have become a bad habit which by voluntary effort the patient may be able to overcome with encouragement and assistance. Finding some new form of relaxation is most helpful, particularly, music, painting or some contact with the countryside — bird watching or the study of trees and flowers. A wider vista of life in other forms does much to help the individual to get his own life and little problems in proper perspective. Sometimes breathing or postural exercises have a remarkable effect in enabling the patient to reduce his emotional load. I have seen many patients who have been able to overcome their chronic anxiety state.

The internist has an important role in the selection of patients for operation. With good selection, excellent results are obtained in about 85 per cent of cases, poor results in 5 per cent, with a 1 to 2 per cent mortality rate. However, one is still a bit concerned about the long-term follow-up—about a tendency to weight loss and anemia, and tuberculosis—and it is wise to ensure that the patient "earns" gastrectomy by evidence of failure to respond to medical management or by troublesome relapses.

The foregoing are general considerations, and I would now like to turn to particular problems of management of gastric and duodenal ulcer separately.

Gastric Ulcer

First, it is important to realize that radiographic studies can be misleading. Small gastric ulcers are not always visualized radiologically and may be seen gastroscopically, but false positive diagnoses are not infrequent, and rugal folds particularly high up on the lesser curve may simulate a gastric ulcer. Further diagnostic difficulty may sometimes arise with hyperperistalsis and with primary gastric diverticulum, and gastroscopy is very helpful particularly when there is some discrepancy between clinical and radiological pictures. Figure 1 illustrates pseudo ulcer.

Naturally, with gastric ulcer the question of malignancy arises, but I believe that with a combination of radiological and gastroscopic studies it is possible very accurately to pick out simple ulcers. Our confidence in so doing has been strengthened by a follow-up study of 285 consecutive patients with gastric ulcer, followed up over three years. The

Figure 1.—A pseudogastric ulcer due to rugal irregularities.

TABLE 1.—*Differential diagnosis of simple ulcer.*

Material: All fresh cases of gastric ulcer—i.e., cases never previously diagnosed at Central Middlesex Hospital or elsewhere—seen at the hospital over a period of two years.

Total	307
Initially diagnosed at partial gastrectomy for perforation or hematemesis	22
Available for study	285

Clinical Group	No. of Cases	Presumed Benign Ulcer (Incomplete Follow-up)	"Proved" Benign Ulcer	"Proved" Malignant Ulcer*
I	266	16	249	1 (0.4%)
II	19	0	15	4 (21%)
Total	285	16	264	5 (1.8%)

Notes:

Group I—Confident diagnosis of benign ulcer x-ray studies available	255
Diagnosed at operation for perforation only	3
Diagnosed at gastroscopy only	8
Group II—Diagnosis of benign ulcer, but possibility of error recognized	19

Proof of benign ulcer:

Group I—Died, no evidence of gastric cancer	12
Subsequent partial gastrectomy	64
Followed for 3 years; no evidence of gastric cancer	173
Group II—Died, no evidence of gastric cancer	1
Subsequent partial gastrectomy	6
Followed for 3 years; no evidence of gastric cancer	8

*Proof of malignant ulcer by autopsy or by partial gastrectomy in each case.

ulcers were put into two groups—those thought to be simple and those in which there was an element of doubt. Ulcers thought to be definitely or probably neoplastic were classified separately and treated surgically.

The follow-up is, in fact, not yet complete but amongst the ulcers deemed to be simple only one was proved malignant in our follow-up studies.

The distinction between simple and malignant ulcer of the stomach is most important. With the combination of clinical features and radiological findings and, in doubtful cases, gastroscopy, it is possible to achieve a very high degree of accuracy. (From the follow-up experience it seems that the chance of missing a malignant ulcer is less than one-half of 1 per cent.) But this can be achieved only by constant vigilance and cooperation between the radiologist and the clinicians. My colleague, Dr. Pygott, radiologist at the Central Middlesex Hospital, stresses the following points between the diagnosis of simple and malignant ulcer:

(a) *Size and site.* Mere size of the ulcer is not of any diagnostic significance, nor is site in itself an absolute criterion, but simple ulcers of large size are rare in the antrum and on or near the greater curvature.

(b) *Shape.* Ulcers that form a saddle across the lesser curvature extending out to both anterior and posterior walls of the stomach are usually malignant.

(c) *Character of the crater.* Simple ulcers occurring anywhere except in the roof of the antrum near the pylorus can generally be shown in one view or another to project beyond the general outline of the adjacent normal portion of the stomach. Where a large part of the stomach wall is occupied by an ulcer so that the profile features are indeterminate, some help may be obtained from the fact that large neoplastic ulcers tend to be relatively shallow whereas large simple ulcers are usually deep. As a side feature, air is rarely trapped in the crater of a neoplastic ulcer in the standing position but is commonly trapped in large simple ulcers.

(d) *Margins of the crater.* The margins of a neoplastic ulcer may be quite shallow and irregular when ulceration has just commenced in a plaque of growth. The meniscus sign of a rolled margin to the ulcer is equally well seen in large simple ulcers as in neoplastic ones and is not, in my view, a deciding one—except when it is found around a shallow ulcer, when I believe it can be a useful sign of neoplasm.

(e) *Features of the surrounding stomach.* Gross distortions of the normal outline of the stomach can occur as a result of simple ulceration through scarring in the ulcer area and extending from it. These distortions are of a linear character—i.e., pulling

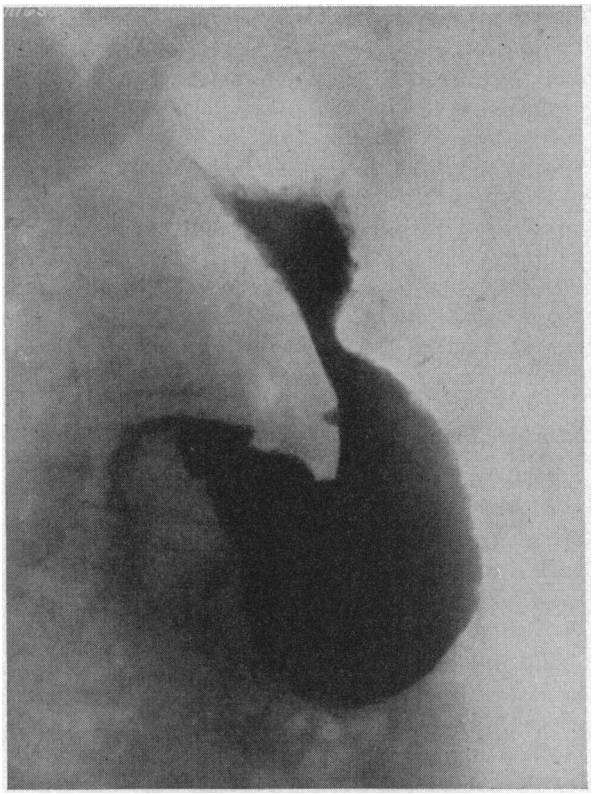

Figure 2.—A simple gastric ulcer showing the ulcer projecting clearly from the lesser curve.

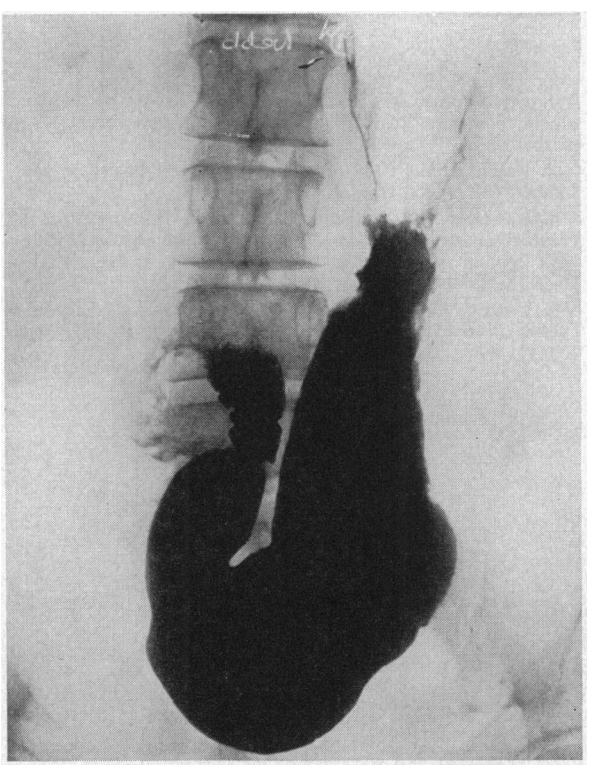

Figure 3.—A malignant ulcer of the stomach showing the ulcer crater is within the line of the lesser curve.

TABLE 2.—*146 patients with gastric ulcer treated in bed for four weeks.*

	No.	Per Cent
Completely healed	34	23
More than 80 per cent healed	32	22
50-79 per cent healed	40	27
Less than 50 per cent healed (including 14-10 per cent with ulcer larger than on admission)	40	27

All followed up. None had cancer.

toward the ulcer or ulcer site in radiating lines from it—commonly in the line of the lesser curve itself, rolling the stomach up and drawing up the antrum and pylorus; or obliquely down into the antrum, resulting in the teapot type of deformity; or transversely, resulting in the hourglass deformity, the greater curve being drawn toward the lesser.

In neoplastic ulceration, deformity of outlines tends to be multidirectional. The antrum may be generally contracted in a more or less conical manner, or the curvatures of the stomach may be irregularly approximated from the two sides or a smaller area of stomach may be bizarre in shape.

The mucosal pattern around the neoplastic ulcer may of course be grossly destroyed or the rugae may be stiffened and broadened and little affected by controlled compression.

Reference is always made to disturbances of peristalsis in the area of ulceration, but this is of relatively slight value in the cases presenting most difficulty. Contractions are grossly impaired or absent in the vicinity of large simple ulcers. Of course, where peristalsis is absent in an area of the body of the antrum where ulceration is slight in extent, there is good evidence of neoplastic involvement.

At times gastric insufflation through a Ryle's tube with air either alone or in combination with intravenous injection of morphine, 6.0 mg., may give more clearly defined answers to the points raised but these special methods do not supplant an investigation by a complete routine which should include careful palpation of the abdomen when an ulcer of doubtful nature has been located.

It is in fact easier to distinguish between simple and malignant ulcers radiologically than it is to distinguish them from the peritoneal surface at a time of acute perforation, and in our experience some 10 per cent of "simple gastric ulcers" diagnosed at laparotomy for perforated ulcer, are in fact malignant. Gastroscopy is, of course, a further aid in achieving accuracy of diagnosis (see Figure 4).

There is no doubt that in patients with a gastric ulcer with a short history, complete healing often occurs. In fact, this may occur while they are on a waiting list to come into hospital. Once they come into hospital our general experience with the healing of gastric ulcer is summarized in Table 2.

Figure 4.—A malignant ulcer in the pyloric antrum which appeared to be a simple ulcer from the peritoneal surface at the time of acute perforation.

Surgical treatment is not generally undertaken unless after some months the ulcer still remains unhealed with return of symptoms. I do not believe that routine partial gastrectomy is needed for all gastric ulcers. If one can achieve complete healing radiologically and gastroscopically, there is, in fact, a very fair chance of the patient's having some years of freedom from further trouble. In practice, about half the patients will need operation sooner or later.

Duodenal Ulcer

Although the radiological diagnosis of duodenal ulcer is fairly accurate, it is possible for patients to have troublesome and severe symptoms with a well filling duodenal cap which may hide an ulcer in the postbulbar region. Generally speaking, every patient with a duodenal ulcer should be given a thorough trial of medical treatment. With patients with more than a two-year history the chance of getting a prolonged remission is probably less than 10 per cent, but with a short history or with patients with long remissions and those with obvious environmental factors which can be influenced, medical treatment should certainly be continued. A bias toward surgical operation is needed for patients with unusually severe pain, and particularly pain in unusual sites—such as through to the back—when the pain does not readily respond to ordinary medical measures, and when the complications of hemorrhage, perforation or stenosis have arisen. The combination of gastric and duodenal ulcer is also a further argument for operation.

Stomal Ulcer

The medical dividends are small but they do exist particularly when there has been some exogenous factor leading up to the breakdown, but in most cases partial gastrectomy or further partial gastrectomy with vagotomy is indicated, and, if ulceration then recurs, total gastrectomy.

The internist can play an important role, not only in medical management but also when operation is needed. All the surgical patients remain in my medical wards for their operation, and I assist in the prevention and control of respiratory infections and postoperative complications, and the maintenance of proper blood and electrolytic balances.

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